RISC PC

Data Sheet 12
New faster C compiler

April 1994

Improved libraries and modifications to the code generator have resulted in a new Acorn C compiler, C Release 5, which is more efficient and compiles programs which run typically ten per cent faster than C Release 4.

Acorn

The compiler is being made available to developers (through Acorn Developer Support), and will be on sale publicly later in the year, as part of a new release of programming tools for RISC OS. The latter will also include a comprehensive library of RISC OS desktop objects (such as windows, menus and dialogue boxes) for writing Style Guide-compliant applications, a new Assembler and a C++ compiler.

The performance improvement is the result of many small improvements to the compiler, such as in-lining some commonly used small library functions, and the introduction of conditionalised conditions. Another important enhancement which has been made to Acorn C is the introduction of Variable Lifetime Analysis: C Release 5 is now smarter at allocating variables to registers. These improvements together result in smaller programs which use less memory and run faster.

The Acorn C compiler compiles ANSI C as defined by the American National Standard for Information Systems - Programming Language C, X3J11/90-013, 14 February 1990.

The compiler has been tested against release 2.00 of the Plum-Hall C Validation Suite (CVS), widely regarded as the toughest C test suite available, and adopted by the BSI for C validation in Europe. In the language conformance sections of the CVS, it fails in only two trivial ways, both of which concern production of required diagnostics.

Acorn C Release 5 also has a pcc mode, accepting the dialect of C used by Berkeley UNIX.

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